

360.1 DESCRIPTION

This work consists of an application of asphalt covered with a spread of cover aggregate.

360.2 MATERIALS

A. Asphalt: Asphalt shall conform to Section 890.

B. Cover Aggregate: Cover aggregate shall conform to Section 881.

360.3 CONSTRUCTION REQUIREMENTS

A. Weather and Seasonal Requirements: Surface treatment operations will be permitted only during daylight hours, when conditions are dry and when wind does not adversely affect the spraying operation.

Minimum temperatures and seasonal limitations are as follows:

Cover Aggregates	Air and Surface Temp. (In the Shade and Rising)	Seasonal Limitations (Dates are Inclusive)
Type 1	70° F (21 C)	June 1 - Sept. 15
Type 2	70° F (21 C)	June 1 - Sept. 15
Type 3	60° F (16 C)	June 1 - Aug. 31
Type 3	70° F (21 C)	Sept. 1 - Sept. 15

B. Equipment: The following equipment shall be furnished:

1. A rotary power broom.
2. Equipment for heating and applying the asphalt conforming to the requirements of Section 330.3.C.
3. A self-propelled aggregate spreader, with positive controls capable of depositing the required quantity of aggregate uniformly over the full width of the asphalt application. When spreading Type 2 cover aggregate, the spreader shall apply the larger aggregate to the surface ahead of the smaller aggregate.
4. A minimum of four self-propelled pneumatic smooth tired rollers for each spreader in use. Each roller shall completely cover an overall surface width of at least 60 inches (1500 mm) and furnish a minimum uniform rolling weight (mass) of 250 pounds per inch (4.5 kilograms per mm) of rolling width.

- C. Surface Preparation:** The surface shall be thoroughly swept with a rotary power broom and cleaned of all foreign material. Appurtenances immediately adjacent to the surface to be treated shall be protected from the splatter of asphalt. Manhole covers, water shut valves, etc. shall be covered to ensure that liquid asphalt is not applied to them, as directed by the Engineer. Freshly primed bases shall be cured prior to the application of surface treatments.
- D. Application of Asphalt:** The asphalt shall be maintained within a temperature range of 120° F to 180° F (49° C to 82° C) during application. Asphalt shall be applied by a pressure distributor in a uniform and continuous manner. Unauthorized increases in the asphalt application rate will not be eligible for payment.

The angle of the spray nozzles and the height of the spray bar shall be set to obtain uniform distribution. When starting and stopping emulsion application, a strip of building paper or other suitable material, at least 3 ft (1 m) in width and at least 1 ft (0.3 m) longer than the width of the spray bar, shall be used to prevent a double application of emulsion. The distributor shall travel at the established speed when the spray bar is opened. Skipped areas and deficiencies shall be immediately corrected. Areas inaccessible to the distributor shall be satisfactorily covered by hand spray methods.

Spraying operations shall not proceed when it is evident the asphalt spread will not be covered with aggregate and rolled all in accordance with the prescribed schedule.

- E. Application of Cover Aggregate:** Cover aggregate shall be spread immediately following application of the emulsion. For wind conditions of 5 mi/hr (8 km/hr) or less, the cover aggregate shall be spread within 5 minutes of the application of the emulsion. For wind conditions greater than 5 mi/hr (8 km/hr), the time may be reduced in the field to ensure the aggregate is applied before the emulsion breaks. Time limits for spreading of cover aggregate when using high-float or rapid-setting emulsions shall be adjusted as directed to satisfy project conditions. The aggregate shall be applied before the emulsion begins to break (emulsion still brown in color).

A complete aggregate coverage, shall be continually maintained. A strip of asphalt application approximately four inches (100 mm) wide, along that side of the spread forming a longitudinal joint with the adjacent spread shall be left uncovered. The adjacent asphalt and cover aggregate application shall overlap this strip. In lieu of this procedure a butt joint may be constructed using special end nozzles.

Longitudinal joints, other than at centerline, will not be permitted within the center 24 feet (7.2 meters).

When loading trucks, the cover aggregate shall be screened to minimize segregation, eliminate oversize, and effectively break up or discard material bonded into chunks. When required, aggregate shall be uniformly moistened before or during loading.

Unauthorized increases in application rates will not be eligible for payment.

Prior to rolling, the contractor may be directed to adjust inequalities in the spread of Type 3 cover aggregate with a drag broom.

F. Rolling: Rolling shall begin immediately behind the spreader and shall consist of four complete coverages using pneumatic tired rollers. A complete coverage is defined as rolling full width in one direction. The rolling shall be completed within 40 minutes after the cover aggregate is applied. Rollers shall be operated in unison at a close interval, and if the width of spread allows, in a staggered formation. Rollers shall not be operated at a speed in excess of five miles (eight kilometers) per hour. Asphalt and cover aggregate applications shall not extend more than ½ mile (0.8 kilometer) beyond the rolling operation. With the use of minimum specified equipment the project shall be completed in ½ mile (0.8 kilometer) increments, except for the sweeping of excess cover aggregate. The weight and tire pressures of the rollers shall be varied as directed to obtain optimum embedment of the cover material without undue crushing of the aggregate. Special attention shall be given to the transverse and longitudinal joints during rolling. Unsatisfactory joints shall be corrected without additional compensation. Turning of rollers on the freshly treated surface is prohibited. Rolling at night or when light conditions would create a traffic hazard will not be allowed.

G. Traffic Control: Construction operations shall be coordinated to minimize traffic delays. One-way traffic shall be maintained during application of the surface treatment on driving lanes. Upon completion of rolling, traffic will be permitted to travel on the treated surface. Traffic shall be controlled by pilot cars and flaggers during application of the surface treatment on driving lanes with the speed of pilot cars not to exceed 20 miles (32 kilometers) per hour on the freshly applied surface treatment for a period of at least four hours after application.

The width, arrangement, and sequence of the parallel application strips shall not unduly inconvenience traffic.

H. Maintenance and Repair: Areas of the surface treatment, which peel or are otherwise unsatisfactory, shall be repaired with additional asphalt, cover aggregate, and rolling. Compensation for repairs due to causes beyond the control of the Contractor will be paid at the contract unit price for asphalt surface treatment.

The finished surface treatment shall be uniform and smooth riding. Transverse or horizontal ridges, raveled spots, wheel marks, depressions, abrupt color changes, and other inequalities shall be corrected. Payment will not be made for this correction work.

Asphalt splattered on roadway appurtenances shall be satisfactorily cleaned off by the Contractor.

Loose material remaining on the surface shall be lightly broomed off during the cool period of early morning of the day following application or as directed by the Engineer. A final brooming shall be accomplished during the cool period of early morning within 34 to 72 hours from the time of application. The final brooming shall include the entire surface of the asphalt surface treatment application, additional lane widths, intersections, and shoulders. The loose material resulting from the final brooming shall be swept onto the roadway inslopes.

Broomed off material in curb and gutter sections shall be picked up by the Contractor.

360.4 METHOD OF MEASUREMENT

A. Asphalt for Surface Treatment: Asphalt for surface treatment will be measured to the nearest 0.1 ton (0.1 metric ton).

B. Cover Aggregate: Cover aggregate will be measured to the nearest 0.1 ton (0.1 metric ton).

360.5 BASIS OF PAYMENT

A. Asphalt for Surface Treatment: Asphalt for surface treatment will be paid for at the contract unit price per ton (metric ton).

B. Cover Aggregate: Cover aggregate specified will be paid for at the contract unit price per ton (metric ton). Payment will be full compensation for furnishing, installing, and all incidentals required to complete the work.